

What is claimed is:

1. A vaporizer for CVD comprising:

a dispersion unit which disperses a plurality of raw-material solutions into a carrier gas in a fine particulate or misty form;

a plurality of raw-material-solution passages which respectively supply said plurality of raw-material solutions, separately from one another, to said dispersion unit;

a carrier gas passage which supplies said carrier gas to said dispersion unit separately from each of said plurality of raw-material solutions;

a vaporization unit which vaporizes said plurality of raw-material solutions dispersed by said dispersion unit; and

an orifice which is connected to said vaporization unit and said dispersion unit and through which said plurality of raw-material solutions dispersed by said dispersion unit are introduced into said vaporization unit.

2. The vaporizer for CVD according to claim 1, wherein

said dispersion unit is disposed between said orifice and individual leading ends of said plurality of raw-material-solution passages, and

said orifice has a diameter smaller than a diameter of each of said plurality of raw-material-solution passages and a diameter of said carrier gas passage.

3. The vaporizer for CVD according to claim 1 or 2,

wherein when said raw-material solutions are vaporized, said vaporization unit becomes a depressurized state, and said dispersion unit becomes a pressurized state.

4. A vaporizer for CVD comprising:

a plurality of raw-material-solution pipes which respectively supply a plurality of raw-material solutions separately from one another;

a carrier gas pipe which is disposed in such a manner as to surround exteriors of said plurality of raw-material-solution pipes and allows a pressurized carrier gas to flow to said exterior of each of said plurality of raw-material-solution pipes;

an orifice provided in a leading end of said carrier gas pipe and spaced away from leading ends of said plurality of raw-material-solution pipes;

a vaporization tube connected to said leading end of said carrier gas pipe and led to an interior of said carrier gas pipe via said orifice; and heating means for heating said vaporization tube.

5. The vaporizer for CVD according to claim 4, wherein said carrier gas and said plurality of raw-material solutions are mixed between said orifice in said carrier gas pipe and said leading ends of said plurality of raw-material-solution pipes, said plurality of raw-materials are dispersed into said carrier gas in a fine particulate or misty form, said dispersed fine particulate or misty raw-material solutions are introduced into said vaporization tube

through said orifice and heated to vaporize by said heating means.

6. The vaporizer for CVD according to claim 4 or 5, wherein said orifice has a diameter smaller than a diameter of each of said plurality of raw-material-solution pipes and a diameter of said carrier gas pipe.

7. The vaporizer for CVD according to any one of claims 1 to 6, wherein

said plurality of raw-material solutions are a mixture of  $\text{Sr}[\text{Ta}(\text{OEt})_5(\text{OC}_2\text{H}_4\text{OMe})]_2$  and a solvent and a mixture of  $\text{Bi}(\text{MMP})_3$  and a solvent, and

said carrier gas is an argon gas or a nitrogen gas.

8. A solution-vaporization type CVD apparatus comprising said vaporizer for CVD of any one of claims 1 to 7.

9. A solution-vaporization type CVD apparatus comprising:

said vaporizer for CVD of any one of claims 4 to 6; and  
a reaction chamber connected to said vaporization tube,  
wherein deposition is carried out with said plurality of  
raw-material solutions vaporized in said vaporization tube.

10. A vaporization method for CVD comprising:  
supplying a plurality of raw-material solutions and a carrier  
gas to a dispersion unit separately from one another;

mixing said plurality of raw-material solutions and the carrier gas in said dispersion unit and dispersing said plurality of raw-material solutions into said carrier gas in a fine particulate or misty form; and

vaporizing said raw-material solutions by adiabatic expansion immediately after dispersion.

11. The vaporization method for CVD according to claim 10, wherein said raw-material solutions are dispersed in a fine particulate or misty form within one second after mixture of said raw-material solutions.